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GOLD COAST

REPORT

ON THE

MEDICAL DEPARTMENT

FOR THE YEAR

1950

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AND TROPICAL MEDICINE

GOLD COAST

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Annual Medical and Health Report for the Year 1950

I—PUBLIC HEALTH

(i) SUMMARY OF IMPORTANT EVENTS

The acute shortage of Medical Officers still continues but with the amendment to the Medical Practitioners and Dentists Registration Ordinance it is expected that there should be recruitment of Medical Practitioners with recognised foreign degrees. It is also expected that there may be secondments from the National Health Service.

There has been no improvement in the recruitment of Nursing Sisters. The shortage of Nursing Sisters has a serious effect on the training of pupil nurses in the hospitals.

2. *Staff Changes.*—The following staff changes occurred during 1950: Mr. J. O. Frappell, Chief Accountant and Executive Officer of this department, transferred to the Gold Coast Railway as Principal Accountant. Mr. J. J. O. Kpobie, Administrative Assistant, promoted Hospital Secretary. Mr. J. A. Quartey, Assistant Accountant Grade II, promoted Administrative Assistant. Miss K. J. Trott, English Mistress, transferred to Education Department as Education Officer. Miss Dorothy Lynn, Nursing Sister, transferred on promotion as Senior Nursing Sister to Sierra Leone.

3. *Retirements.*—

(*a*) *On Pension :*

Dr. J. H. Dobbin, Assistant Director of Medical Services.
Dr. G. Robinson, Specialist (Pathologist).

(*b*) *Resignation :*

Two Medical Officers, one of whom was re-engaged on contract, one Senior Nursing Sister and six Nursing Sisters resigned their appointments.

(*c*) *Invalidings, etc.:*

Dr. A. H. Chenard, Medical Officer, Miss M. B. N. White, Sister Tutor and Mr. Peter Elsip, Radiographer were invalided.

4. *New Appointments.*—Newly appointed officers in 1950 included three Medical Officers, one Senior Health Nursing Sister, three Health Nursing Sisters, five Nursing Sisters, one Occupational Therapist, two Government Chemists and one English Mistress.

5. *Study Leave.*—During the year the following officers were granted study leave in the United Kingdom for the purpose of obtaining postgraduate qualifications.

Name	*Course taken*
Dr. David Scott, Medical Officer of Health ...	... D.P.H.
,, M. J. Colbourne, Medical Officer of Health	... C.P.H. & D.P.H.
,, H. B. L. Russell, Medical Officer of Health	... D.P.H. (2nd Part)
,, N. Gray, Medical Officer	... F.R.C.S., Edinburgh
,, R. F. Antonio, Medical Officer	... D.T.M. & H.
,, G. M. Edington, Medical Officer	... Diploma in Clinical Pathology.
,, Frank Roberts, Medical Officer	... Diploma in Child Health.
,, G. W. R. Macgregor, Medical Officer ...	... D.T.M. & H.
,, J. L. C. Whitecombe, Medical Officer ...	... D.T.M. & H.
,, B. J. Chelmicki, Medical Officer	... D.T.M. & H.

6. *Scholarships and Examinations.*—

(*a*) *Government Medical Scholars in United Kingdom :*

New awards 1950 (i) three locally (ii) three already studying Medicine in United Kingdom }	6
Previous awards to scholars not yet qualified	23
Scholars qualified not yet returned	2
Qualified scholars returned to Colony in 1950	3

(*b*) *Government Dental Scholars in United Kingdom :*

No awards in 1950.
There were five Dental scholars in United Kingdom during the year.

(*c*) *Government Pharmacy Scholars in United Kingdom :*

New awards 1950—Nil (Mr. D. Dewhurst proceeded to United Kingdom having been awarded Scholarship in 1949).
Previous awards—four.

(*d*) *Other Government Scholarships :*

(i) Miss Kate Myers of the Nurses Training College was awarded scholarship for House-Keeper Matron's Course.

(ii) One Pupil X-ray Assistant proceeded to United Kingdom on scholarship for a course in Radiography.

(iii) Four members of the Sanitary Inspectorate staff received scholarship awards.

Local Examinations :

Pharmacy Examinations.—Nine Government and two private students passed the Pharmacy Examination.

Midwives Board.—Thirty-five Pupil Midwives were successful at the Midwives Examination. This number included four State Registered Nurses from the Nurses Training College, 15 Second Division Nurses, 14 Pupil Midwives and two private candidates. The 14 Pupil Midwives were given Government appointment.

Royal Sanitary Institute Certificate (West Africa).—Twenty-three candidates presented themselves for this examination and 17 were successful. Of the successful candidates 14 were Government Second Division Sanitary Inspectors and three Municipal Sanitary Inspectors.

7. *New Buildings.*—New constructional works of importance including extensions and alterations to hospitals were undertaken during the year. The following is an account of major and minor works undertaken under the department's building programme :—

Ashanti.—Twelve quarters for nurses at the Child Welfare Clinic begun in 1949 were completed during 1950. These included kitchens, septic-tank latrine and showers. A septic-tank latrine for out-patients at the Child Welfare Clinic was also completed during the year.

Additions and improvements.—Alteration and redecoration of ex-army Signal huts in the South Wing Hospital compound was completed. Certain old Army buildings were also altered and redecorated to make classrooms and an office for the Sister Tutor.

Conversion and redecoration of both wards and staff quarters of the 52nd General Hospital began and was nearing completion at the end of the year.

A new midwifery block to the South Wing Hospital was opened early in the year.

Mampong.—Extension of the Mampong Dispensary block was completed during the year. The construction of a water tank with a capacity of about 500 gallons was undertaken by the Mampong (Ashanti) District Development Committee during the year.

Hohoe.—The construction of a new hospital at Hohoe was commenced in January and was well under way to completion at the end of the year.

Tamale.—A new 22-bedded female ward, a six-bedded prisoners ward and a waiting room were under construction.

Yendi.—A new theatre with extensions to the hospital bathroom and latrine facilities were under construction.

Nsawam. —The kitchen has been enlarged and covered way completed to the male ward, the covered way to the female ward is also under construction.

Colonial Mental Hospital.—The observation Block and new kitchen were opened during the year.

Winneba. — A new mortuary is being erected ; a drying room and kitchen for patients families were started.

Kibi.—A new store for linen was built.

Ho Leper Settlement.—A town hall and children's dormitory were completed and opened.

Ho Hospital.—Apart from minor repairs carried out on existing buildings, work on a new laboratory and a 10,000-gallon concrete water tank was commenced.

8. *Legislation.*—The following amendments to existing legislation were passed :—

(i) The Hospital Fees Amendment Ordinance of 1950, which made the Hospital Fees Ordinance applicable to the Northern Territories ; and

(ii) The Medical Practitioners and Dentists Registration (Amendment) Ordinance, 1950, which made provision for the temporary licensing of persons as Medical Practitioners who are entitled to practise medicine, surgery and midwifery by the law of any place outside the United Kingdom. Such persons will be licensed by the Director of Medical Services subject to such conditions as he may determine.

9. *Anti-Malarial Measures and Sanitation.*—Again it has to be reported that the anti-malarial measures are, owing to the lack of supervisory staff, purely routine. The routine measures consist of limited house spraying with D.D.T. in kerosene, drainage and maintenance of drains, oiling standing water, special surveys in selected area for detection and destruction of mosquito breeding. It will be appreciated that these measures are anti-mosquito and not strictly anti-malarial measures.

Sanitation in the larger towns is the responsibility of the local Town Council but certain towns, especially in the Colony, have greatly increased in size and without any form of competent local government it is increasingly difficult, with the depleted Medical Department staff, to maintain any reasonable standard of sanitation.

10. *Maternity and Child Welfare.*—As was pointed out last year this service still lacks a sufficient number of trained Health Visitors. Arrangements were put in hand during the year to start training courses for these officers now that a Senior Health Sister has been appointed. The clinics still retain their popularity with the public.

11. *British Red Cross Society.*—During the year under review there was increased activity of the Junior Red Cross links attached to the schools. In some rural areas these links do excellent health propaganda by instructing the local people in first aid and general sanitation.

12. *Smallpox.*—Three hundred and fifty-three cases with 42 deaths were recorded. These cases were mostly reported from small outbreaks at Asamankese, Oda, Koforidua and Ahanta-Nzima Districts. These areas were declared infected areas under the Infectious Diseases Ordinance. In 1949 there were 91 cases with six deaths.

13. *Cerebro-Spinal Meningitis.*—This disease never assumed epidemic proportion during the year. Nine hundred and eighteen cases were reported with 166 deaths, most of the cases occurred in the North and were a carry over from the 1949-50 dry season epidemic.

14. *Yellow Fever.*—Twenty-one suspected cases of yellow fever were reported and out of this number 11 cases were confirmed either by protection tests or on histological examination; one of these cases had been previously inoculated; this case was fatal. There were five deaths.

The eleven positive cases were from the following areas :—

Bogoso—2 cases, 1 fatal
Ankobra Ferry—1 non-fatal
Atrankama, Oda area—1 non-fatal
Abose Okai, Accra—1 fatal case
Kade, Oda area—1 non-fatal case
Akwatia, Oda area—1 non-fatal case
Takoradi—1 fatal case
Topreman, Oda area—1 fatal case
Aboso Tarkwa—2 cases, 1 fatal
Asuboni, Oda—1 non-fatal
Korle Gonno, Accra—1 non-fatal.

15. *Pulmonary Tuberculosis.*—Seven hundred and seventy cases with 213 deaths were treated as in-patients, 1,291 cases as out-patients giving a total of 2,061 cases. Again from hospital records there is a decrease in the number of patients suffering from pulmonary tuberculosis. There is also a decrease in the number of deaths recorded by the various registrars of deaths. In 1949, 789 deaths were registered against 747 deaths in 1950.

16. *Medical Field Units.*—This unit was formerly called the Yaws and Trypanosomiasis Campaign but has now been redesigned to permit a wider field of survey and mass treatment for disease other than yaws and trypanosomiasis.

The school for the training of Native Administration dressers was closed during the year and new arrangements were made to train the dressers in the district hospitals.

Trypanosomiasis surveys are still carried out ; the following table shows the results of these surveys :—

TABLE I

Area	Persons examined	Found infected
Northern Region	114,815	155
Ashanti, South—Northern Territories	126,946	224
	241,761	379

The Treatment Teams carried out the following work :—

TABLE II

Area	TRYPS			YAWS		
	Male	Female	Total	Male	Female	Total
Northern Territories Field Units	77	49	126	2,139	666	2,805
Ashanti and Colony Field Units	134	51	185	1,291	1,028	2,319
Kintampo Centre	57	15	72	193	165	358
Yeji Centre	62	28	90	—	—	—
Abrepo	180	102	282	—	—	—
Totals	510	245	755	3,623	1,859	5,482

The Specialist-in-Charge reports that during the year Mel B was tried out. His conclusion was that Mel B can produce at least temporary cure of cases incurable by Tryparsamide but it is rather dangerous. There was one death in fourteen cases treated from Arsenical Encephalopathy. As this drug is given by the intravenous route its utility is limited in mass treatment especially for children.

17. *Leprosy.*—The new settlement which was opened at Weija near Accra is still having its teething troubles, especially with the disposal of the burnt out cases. The Ho settlement also has this trouble. It is considered that a separate settlement should be built for these crippled disfigured people, in which they could receive symptomatic treatment.

During the year review 767 cases were treated as in-patients 10,177 cases as out-patients.

Many new out-patient dispensaries were opened during the year, both in the bush and attached to district hospitals. The standard treatment is with D.A.D.P.S. ; so far the early results have been very encouraging, there being very few cases reported of intolerance to the drug.

18. *Mental Hospital.*—On the 31st December, 1950, there were 729 inmates (607 males, 122 females) the origin of these inmates was: Northern Territories 180, Ashanti 137, Colony 234, Nigeria 40, French Territories 138.

There were 276 new admissions, the average daily number accommodated being 642·7. Ninety-one patients were discharged and 138 died.

The general health of the inmates was fair and as good as could be expected considering the gross overcrowding which cannot be remedied until the new Mental Hospital at Kumasi is built.

19. *Nurses Training College, Accra.*—The college has now achieved one of its ambitions. In June, 1950, the General Nursing Council for England and Wales granted full reciprocity : therefore college trained nurses who pass the Final State Examination of the Gold Coast Nurses' Board are entitled to have their names entered on the English State Register.

The entrance to the college is by competitive examination and interview. During training all students live in the College Hostel. The course lasts five and a half years and is divided as follows :—

(*a*) One year pre-nursing course for girls with elementary education. This course is purely educational and the subjects taught are English, Arithmetic, Elementary General Science, Domestic Science, Civics and Geography.

(*b*) Four months preliminary Nursing class conducted in the college.

(*c*) Three years general training in the Gold Coast Hospital.

(*d*) On passing Final State examination nurses proceed to the Maternity Hospital to take the Midwifery course.

At the end of the year there were 150 students at the college distributed in the following categories :—

Second Term Pre-nursing	26
Third Term Pre-nursing	20
First Hospital year	41
Second Hospital year	30
Third Hospital year	33
	150

During the year 14 nurses passed the Final State Examination and 26 nurses passed the Preliminary State examination.

20. Maternity work carried out in Government Hospitals :—

RECORD OF WORK DONE

TABLE III

	1949	1950
Out-Patients	63,874	64,384
In-Patients	6,762	7,991

School of Midwifery, Accra.—During the year there were 75 pupils in residence and 32 were successful in passing the qualifying examination.

Midwifery Training School, Kumasi.—This school only accepts pupils from Ashanti and the Northern Territories. There are 32 pupils and of these five are supported by the Native Authorities in the Northern Territories. The other pupils are from Ashanti and are bonded to serve Government for a certain period after qualification.

The Midwifery School is attached to the General Hospital and operates the Maternity unit. This unit has 42 beds and 12 cots.

21. *Dressing Stations and Dispensaries.*—During the year the Native Authority Dressers Training School at Kintampo was closed down. The dressers who had not finished their course were sent to their district hospitals for further training. At present the policy is for these dressers to be trained locally, the course to last 18 months.

Serious consideration has been given to the recruitment of better educated men and to providing an intensive four years training. A difficulty may arise in future years in that these partly trained men may try to assume the title and dignity of a Medical Practitioner.

The Rural Health Centre at Kpandu has now been completed but at the end of the year no start has been made on the other two proposed centres, Effiduasi in Ashanti and Bimbilla in the Northern Territories. It is proposed to open the Kpandu centre under the personal supervision of the Senior Health Sister.

22. *Distinguished Visitors.*—During the year Dr. George I. Scott, M.A., M.B., Ch.B., F.R.C.S., Assistant Ophthalmic Surgeon at the Edinburgh Royal Infirmary, Examiner in Ophthalmology to the Royal College of Surgeons, Edinburgh, and a member of the Council of the Ophthalmological Society of the United Kingdom, and Professor H. W. Rodgers, O.B.E., F.R.C.S., who occupies the chair of Surgery at Queen's University, Belfast, visited the Colony under the Nuffield Foundation Scholarships scheme.

Professor F. J. C. Cambournac of the Lisbon Institute of Tropical Medicine, former Director of Malaria Institute of Aguas de Moura, Portugal and now Regional Malaria Consultant for Africa by World Health Organisation, visited the Colony.

Dr. R. R. Struthers, Assistant Director of Medical Sciences Division of the Rockfeller Foundation, accompanied by Dr. R. S. Morrison, Associate Director, on a visit to Africa for the purpose of studying Medical Education, both of Europeans and Africans, paid a courtesy call to the Director of Medical Services.

Another visitor to the Colony was Dr. E. D. Pridie, C.M.G., D.S.O., O.B.E., Chief Medical Officer, Colonial Office. Dr. Pridie's object was to obtain first hand knowledge of health matters affecting West Africa.

Dr. L. Berner, Professor of Zoology, University of Florida, visited the Colony for the purpose of working on the entomology of the Lower Volta River Basin and was afforded laboratory facilities at the Medical Research Institute, Korle Bu, Accra.

II—IMPORTANT DISEASES TREATED DURING THE YEAR

23. *Diseases of the Enteric Group* (1) (*a*, *b* and *c*).—Three hundred and eighty-five cases were treated during the year. There were 40 deaths. In 1949 there were 429 cases with 49 deaths.

24. *Smallpox* (5).—There were 164 cases with 27 deaths against 91 cases with six deaths for 1949.

25. *Diseases of the Dysenteric Group* (12).—Seven thousand nine hundred and forty-seven cases of dysentery were treated in the hospitals. Amoebic dysentery accounted for 1,255 (47 deaths) ; dysentery unclassified accounted for 5,448 cases (9 deaths). The figures for 1949 were 4,820 (48 deaths) of all types of dysentery.

26. *Cerebro-Spinal Fever* (16).—There were nine hundred and eighteen cases and 166 deaths. In 1949 there were 1,862 cases and 193 deaths.

27. *Rabies* (17).—Hospital returns give seven in-patients with two deaths and 98 out-patients. These cases were patients undergoing anti-rabic prophylactic treatment and not clinical cases of rabies.

28. *Tetanus* (18).—Four hundred and ten cases were recorded with 85 deaths. The figures for 1949 were 585 cases with 75 deaths.

29. *Tuberculosis of the Respiratory System* (19).—Two thousand and sixty-one cases were treated. There were 213 deaths. In 1949 there were 2,072 cases with 231 deaths. The deaths in hospitals for this disease represent 6·7 per cent of deaths from all causes. The percentage for 1949 was 6·8 per cent.

30. *Other Tuberculous Diseases* (20).—Two hundred and ninety-one cases with 12 deaths were recorded. In 1949 the figures were 419 cases with 24 deaths.

31. *Leprosy* (21).—Ten thousand nine hundred and forty-four cases (of whom 20 died) were receiving treatment—of these 767 cases were in-patients. The remainder 10,177 cases were treated as out-patients with D.A.D.P.S. It is too early to give a definite opinion on the value of this treatment but the results so far have been very encouraging. Last year the figure for leprosy was 2,916 cases.

32. *Venereal Disease* (22).—

(*a*) *Syphilis.*—One hundred and fifty-six cases were treated as in-patients with ten deaths and 1,670 cases were treated as out-patients. In 1949 there were 207 in-patients and 1,939 out-patients.

(*b*) *Gonorrhea, complications and sequelae.*—Two thousand one hundred and sixty-four cases were treated as in-patients and 15,381 as out-patients. The figures for 1949 were 2,742 in-patients and 15,913 out-patients.

(*c*) *Other Venereal Diseases.*—Three hundred and eighty-eight in-patients and 2,735 out-patients were treated during the year compared with 436 in-patients and 4,547 out-patients in 1949. There again is a marked decline in the number of venereal diseases treated ; this is probably due to the ease with which penicillin and the "sulpha" drugs can be obtained throughout the country leading to much self treatment.

VENEROLOGIST'S ANNUAL CLINICAL RETURN, 1950

(applicable to Sekondi-Takoradi only)

TABLE IV

	Gonorrhea	Syphilis	Soft Sore and Chancre	Lypho-granu-loma	Urinary Com-plaints	Bilharzia	Yaws	Skin Diseases	Total
Male	2,231	123	115	155	359	24	42	29	3,078
Female	11	4	2	1	129	—	23	14	184
Male	2	—	—	—	2	1	102	14	121
Female	3	—	—	—	—	1	56	11	71
	2,247	127	117	156	490	26	223	68	3,454

New Cases seen	3,454
Daily Attendances	4,982
Total Attendances during the year	8,436

TREATMENT

TABLE V

Penicillin	Acetylarsan	Bismuth	N.A.B.	B.S.T.	Stibophen	Bougies and Sounds	Irrigation
2,933	1,706	944	18	16	249	38	19

33. *Yellow Fever* (23)—Thirteen cases were treated in the hospitals, there were two deaths. In 1949 twelve cases were reported with five deaths.

34. *Malaria* (24).—The following table shows the number of cases of malaria treated as compared with the previous year.

TABLE VI

Type of Malaria	1949		1950	
	Cases	Deaths	Cases	Deaths
Benign Tertian	2,542	11	3,388	14
Subtertian	20,245	25	15,188	45
Quartan	11	1	304	—
Unclassified	81,737	118	68,770	96
Total	104,535	155	87,650	155

From the above table it will be seen that the total number of cases of malaria has decreased but it is difficult to explain the increase in the Benign tertian type. Before 1939 this type of malaria was very rare being mostly found at the seaports, which suggested an imported type.

35. *Blackwater Fever* (25).—There were 94 cases reported, 32 being in-patients (seven deaths) and 62 out-patients. The figures for 1949 were 32 cases with nine deaths.

36. *Trypanosomiasis* (27).—Three hundred and seventy-two in-patients and 1,391 out-patients were under treatment—27 deaths were recorded. For 1949 the figures were 1,319 cases and 47 deaths.

37. *Yaws* (28).—One hundred and forty thousand and eighty-nine cases were treated. One death was reported. In 1949 there were 143,265 cases with no deaths.

38. *Helminthic Diseases* (30, 31, 32).—A total of 25,687 cases were treated during the year—there were 109 deaths. The chief infections were ankylostomiasis 7,208 cases with 28 deaths and schistosomiasis *5,584 cases* with 25 deaths. In 1949 the total number of cases treated was 27,444 with 57 deaths. Ankylostomiasis 10,034 cases with 23 deaths and schistosomiasis 4,412 cases with 2 deaths.

39. *Cancer and other Tumours* (34).—Four hundred and ninety malignant tumours were diagnosed—128 of these were in-patients and from them 102 deaths were recorded—1,121 non-malignant or undetermined tumours were reported. In 1949 there were 311 cases of malignant tumour with 27 deaths, and 856 non-malignant tumours with six deaths.

40. *Rheumatic Conditions* (35).—Seven cases of acute rheumatic fever were admitted during the year and 235 cases were seen as out-patients suffering from the sequelae of this disease. Other rheumatic conditions accounted for 26,503 cases. In 1949 one case of acute rheumatic fever was reported and 35,707 cases of other rheumatic conditions.

41. *Nutritional diseases* (37, 38, 39 and 40*a*).—

TABLE VII

	1949		1950		Increase or Decrease
	Cases	Deaths	Cases	Deaths	
Scurvy (37)	77	—	49	1	–28
Beriberi (38)	205	2	148	5	–57
Pellagra (39)	181	1	187	—	+6
Other Nutritional Conditions (40*a*)	3,795	53	5,780	97	+1,985
Total	4,258	56	6,164	103	+1,906

42. *Affections of the Respiratory System* (49, 50 and 51)

TABLE VIII

	1949		1950	
	Cases	Deaths	Cases	Deaths
Bronchitis (49)	41,803	9	31,359	21
Broncho-Pneumonia (50*a*)	1,996	146	1,453	123
Lobar-Pneumonia (50*b*)	2,135	100	1,882	79
Pneumonia otherwise defined (50*c*)	3,862	58	3,328	54
Other diseases of Respiratory System	9,878	54	12,388	23

43. *Nephritis* (*all forms*) (58).—Eight hundred and thirty-seven cases were treated. There were 61 deaths. Last year there were 1,581 cases with 72 deaths.

44. *Pregnancy Childbirth and Puerperal state* (60).—Sixty-eight thousand and eighty-eight cases were treated. There were 132 deaths.

45. *Abortion* (60*a*).—One thousand nine hundred and twenty-five cases of abortion were seen—there being 15 deaths.

46. *Ectopic Gestation* (60*b*).—There were 182 cases with 19 deaths.

47. *Toxaemias of Pregnancy* (60*c*).— One hundred and sixty cases with 24 deaths.

48. (1) *General Population.*—

TABLE IX

	MID-YEAR 1950	
		Total Number Registered
Total Population	4,625,316	—
Population of Registration Areas	504,658	—
*Birth rate per 1,000 persons living	29·3	14,787
*Death rate per 1,000 persons living	20·0	10,106
Infantile Mortality rate	122	1,804
Still Birth rate per 1,000 total births	88	1,309
Maternal Mortality per 1,000 total births	22·1	354
Deaths from Respiratory diseases per 1,000 deaths registered	101	1,023
Deaths from Pulmonary Tuberculosis per 1,000 deaths registered	73	747
Deaths from Intestinal diseases per 1,000 deaths registered	67	681
Deaths from Malaria per 1,000 deaths registered	123	1,245
Deaths due to Starvation	36	—

* Weighted Average.

The following tables compare mortality and birth rates for 1949 with those recorded for 1950.

TABLE X

DECREASES

	1949	1950
Birth rate per 1,000 persons living	30·6	29·3
Death rate per 1,000 persons living	20·8	20·0
Infantile Mortality rate	125	122
Deaths from Intestinal diseases per 1,000 deaths registered	72	67
Deaths from Respiratory diseases per 1,000 deaths registered	107	101

TABLE XI

INCREASES

	1949	1950
Still birth rate per 1,000 total births	83	88
Maternal Mortality per 1,000 total births	18·3	22·1
Deaths from Malaria per 1,000 deaths registered	115	123
Deaths from Pulmonary Tuberculosis per 1,000 deaths registered	73	73
Deaths due to Starvation	27	36

1950

SEASONAL INCIDENCE OF BIRTHS AND DEATHS

	Births	Deaths
January	1,029	847
February	1,131	886
March	1,340	864
April	1,128	855
May	1,347	827
June	1,333	860
July	1,324	889
August	1,306	876
September	1,211	783
October	1,263	795
November	1,208	774
December	1,167	850
	14,787	10,106

DEATHS ACCORDING TO AGE AND SEX—1950

Sex	Under 24 Hours	24 Hours to 1 Year	1 Year to 5 Years	5 Years to 15 Years	15 Years to 25 Years	25 Years to 45 Years	45 Years to 65 Years	65 Years and over
Males	76	887	757	367	500	1,842	856	684
Females	64	777	703	281	437	831	352	692
Total	140	1,664	1,460	648	937	2,673	1,208	1,376

NATIONALITY OF DECEASED—1950

Sex	Africans	Non-Africans	All Races
Males	5,939	30	5,969
Females	4,130	7	4,137
Total	10,069	37	10,106

NATIONALITY OF BIRTHS—1950

Sex	Africans	Non-Africans	All Races
Males	7,360	82	7,442
Females	7,252	93	7,345
Total	14,612	175	14,787

INFANTILE MORTALITY RATE

Year	1945	1946	1947	1948	1949	1950
	119	110	117	121	125	122

Total Births	14,787
Total Deaths	10,106
Total Still Births	1,309
Total Deaths under Medical Certificates	5,886
Total Infants deaths under one year	1,804
Total T.B. Cases, all forms	795
Birth Rate 1950	29·3
Death Rate 1950	20·0

(ii) GENERAL EUROPEAN POPULATION

TABLE XII

	Officials	Non-Officials	Total	Ranks
Number of European resident	1,135	5,372	6,507	—
Number of Invalided	19	20	39	—
Number of Deaths	4	10	14	—

49. Compared with 1949 the number of resident European rose by 717. The number of invalidings during 1950 was 39 as compared with 45 in 1949.

The number of deaths fell from 16 to 14.

50. The causes of invalidings of European Officials were :—

Chronic Cholecystitis	1
Thyreotixicosis	1
Acute Atonia of the bladder	1
Allergic skin disease	1
Splenitis	1
Abdominal Pain and Depression	1
Cheiropompholyx	1
Herpes Ophthalmicus	1
Post Traumatic Dizziness	1
Neurasthenia	2

Severe recurrent pain at side of head	1
Tropical Neurasthenia	1
Depression	1
Pelvic endometriosis	1
Fracture of scapula	1
Pleurisy	1
Duodenal Ulcer	1
Myocarditis	1
	19

The corresponding figure for 1949 was 21.

51. Causes of deaths of European Officials were :—

Unnatural cause by gunshot wound	1
Intestinal obstruction	1
Burns (Train accident)	1
Cardiac Failure	1
	4

52. Causes of invalidings of non-official Europeans were :—

Diabetis	1
Silicosis	1
Torn Calcaneum Tendon	1
Dysphagia	1
Paratyphoid A	2
Fracture dislocation spine, Compound fracture left ankle	1
Hypertension	1
Fracture base of skull	1
Coronary Occlusion	1
Fractured right femur	1
Depressive state	1
Hypertension and Myocarditis	1
Chronic Sacro-Iliac Strain with Prolapsed intervertebral disc	1
Cause unknown	1
Chronic Synovitis with Arthritis both knees following deformity of legs due to poliomyelitis contracted at the age of four	1
Debility due to Pernicious Anaemia	1
Broncho-pneumonia with cardiac debility	1
Renal Calculus with T.B. testicles	1
Multiple injuries	1
	20

53. Causes of deaths of non-official Europeans were :—

Cause unknown	1
Pulmonary Embolism (Respiratory Failure)	1
Malignant Subtertian Malaria Toxic degeneration of myocardium and left ventricular failure	1
Shock	1
Motor Cycle Accident	2
Ceronary Thrombosis	2
Broncho-pneumonia and Heart Failure	1
Multiple injuries	1
	10

NON-OFFICIAL EUROPEANS

TABLE XIII

	Number	Invalided	Died	Remarks
Merchants	1,430	1	2	—
Missionaries, Males	332	—	—	—
Missionaries, Females	213	—	—	—
Mining Community	1,537	19	8	—
Women (Non-Official)	1,262	—	—	—
Children (general)	598	—	—	—
Total	5,372	20	10	—

(iii) AFRICAN OFFICIALS

Number Resident	Number Invalided	Number of Deaths	Remarks
8,809	56	24	—

53A. The number of resident African Officials rose from 7,949 to 8,809. The number of invalidings rose from 48 to 56 and deaths fell from 37 to 24.

54. The causes of invalidings of African Officials were :—

Pulmonary T.B.	10
Endothelial Sarcoma	1
Oedema of Ankle, etc.	1
Cirrhosis of liver	2
Hypertension	6
Nephritis	1
Hypertension and Glycosuria	1
Defective Vision	1
Paraplegia	1
Gastroptosis	1
Hypertension and Myocarditis	1
Peripheral Neuritis	1
Idiopathic Epilepsy	1
Arterio Sclerosis and Hypertension	1
Loss of Visual Acuity	1
General Debility	1
Congestive Heart Failure	2
Optic Atrophy	1
Advanced Carcinoma of the Tongue	1
Manic Depressive Psychosis	1
Malignant Hypertension	1
Otitis Media	1
Amblyopia	1
Arterio Sclerotic degeneration	2
Cardiac failure	1
Mental Aberration	1
Hyperpicsia	1
Diplopia	1
Paralysis right arm	1
Debility	1
Traumatic-Neurosis	1
Blindness	1
Heart failure	1
Tachycardia	1
Essential Hypertension	1
Haenolytic anaemia	1
Anxiety State	1
Fracture Left knee joint	1
Compound Fracture	1
	56

55. Causes of deaths of African Officials were :—

Lobar Pneumonia	1
Generalised Peritonitis	1
Asphyxia	1
Malaria M.T. and Lobar Pneumonia	1
Coma Diabetic	1
Uraemia and Diseases of Prostate	1
Enteric Fever (cerebral)	1
Starvation	1
Peritonitis	1
Bilateral Pylonephritis	2
Degeneration of liver	1
Acute Pneumonia	1
Pelvic Cellulitis and Peritonitis	1
Malignant Hypertension	1
Pulmonary Tuberculosis	2
Typhoid Fever	1
Internal Haemorrhage	1
Cerebral abscess	1
Cerebral Thrombosis	1
Diabetes Mellitus	1
Neoplasm of the liver	1
Rupture of right kidney	1
	24

(iv) HYGIENE AND SANITATION

56. *Housing.*—The following is the housing situation in the three major municipal towns :—

(i) *Accra.*—Considerable building of the better class of house was in progress. However, slum clearance is urgently needed in certain areas. Difficulty is still being experienced in getting the people to build according to the regulations.

(ii) *Kumasi.*—Although private building for letting out continued there was evidence of continued acute overcrowding. The construction of a new estate was commenced and the first houses will be in occupation in 1951.

(iii) *Sekondi-Takoradi.*—Government, Commercial Firms and private individuals are carrying out a programme of extensive construction in Takoradi. Sixteen blocks of the new Housing Estate of Effia-Kuma are now in occupation by labour workers ; nevertheless this class of workers, both resident and itinerant are faced with housing difficulty and overcrowing.

A new Residential Area is in the course of construction at Windy Ridge North-east of Takoradi and another in the hands of the Public Works Department is nearing completion at Dixcove Road.

57. *Food in Relation to Health and Disease.*—Six thousand one hundred and sixty-four cases of nutritional disease were treated in the Hospitals and Dispensaries during the year under review. One hundred and four deaths were recorded.

In 1949 there were 4,258 cases.

There were also 36 deaths registered as due to starvation.

The fundamental problem of nutrition in this country remains the deficiency of protein. The work of the Departments of Animal Health, Fisheries and Agriculture to increase supplies of animal protein continues but is of necessity slow. Beans, peas and groundnuts are eaten in all parts of the country but not in sufficient quantity and efforts are being made through publicity to popularise an increased use of these foods and also to encourage the use of a cereal staple in those parts of the country where only non-cereal staples are liked.

In the last few years there has been a great increase in the use of bread. An investigation showed that although bread is not being used to replace a staple food it is being used by many people in sufficient quantity to make its use as a carrier for extra nutrients worthwhile. The possibility of importing wheaten flour enriched for B Vitamins, iron and calcium is being considered.

Towards the end of 1950 news was received of a new treatment for Kwashiorkor. Skimmed milk powder is used for this treatment and supplies have now been obtained for use in hospitals.

A Committee on Prisons under the Chairmanship of Sir Leslie M'Charthy was appointed during the last quarter of 1950 and a memorandum proposing new diet scales has been prepared for the Committee.

During the year some of the mining companies have begun to give to their employees a free issue of food yeast and salt, or food yeast, salt and sugar in hot water. This issue is proving popular with the workers, and is having a beneficial effect on their health.

In co-operation with the Department of Education and the Department of Social Welfare the work of teaching better nutrition has been continued. An encouraging feature of this year's work has been the publication by the newspaper of the press releases of some of the nutrition broadcasts.

58. *Mosquito Control.*—House inspections numbered 2,076,174 ; from these 7,222 cases of mosquito breeding were found giving a larval index of 0·35 per cent.

59. *School Hygiene—Accra.*—The School team consists of one First Division Health Visitor and one Second Division Health Visitor, sometimes assisted by a Pupil Health Visitor, and during the year they visited 24 schools.

The most widespread ailments discovered were :—

- Conjunctivitis
- Scabies
- Ringworm
- Fevers
- Dental Caries

The School team's report on the conditions of the school premises is as follows :—

Water.—Only six have a pipe borne water supply.

Playgrounds.—Sufficient but some extremely dirty.

Lavatories.—Twelve schools had *no* lavatories.

Ventilation.—On the whole good except for one school which was constructed throughout with corrugated iron sheets. In the afternoon the heat in this school was unbearable.

All the children were examined for the presence of an enlarged spleen. The result of this examination is shown in the following table.

Age group	Six Years	Seven Years	Eight Years	Nine Years	Ten Years	Eleven Years	Twelve Years	Total
Male	29	21	21	16	28	18	16	149
Female	22	17	16	11	11	9	13	99
Total	51	38	37	27	39	27	29	248

This gave a splenic enlargement rate of 5·4 per cent.

Dental caries was discovered in 5·1 per cent of the children examined. Two cases of Trachoma were observed.

60. *Prisons.*—The daily average population for all prisons was 3375·31 and daily average on the sick list was 47·48. The following table compares the figures for 1948 and 1949 with 1950; it demonstrates that the general health of the Prison population was good.

Year	Daily Average of Prison Population	Daily Average on sick list	Percentage	Deaths	Deaths per 1,000 Prison Population
1948	2990·61	42·24	1·41	25	8·36
1949	3031·48	42·59	1·40	25	8·24
1950	3375·31	47·48	1·40	21	6·22

All prisoners suffering from Tuberculosis and Leprosy are transferred to the Contagious Diseases Prison at Ankaful.

61. *Vaccinations.*—In 1950, 1,059,903 vaccinations were performed and 388,664 people were seen after vaccination. The percentage considered successful was 91·12 per cent.

In 1949, 508,757 vaccinations were performed and 251,483 were seen after vaccination. A positive result was obtained in 88·92 per cent of the cases seen.

II. SPECIAL SERVICES

(v) PORT HEALTH AND AIR TRAFFIC

62. No port or airport was declared infected during the year. The deck passenger traffic still shows a steady increase on the numbers for the previous years. All deck passengers are examined on embarkation and disembarkation.

	1948	1949	1950
Takoradi.—			
Deck passengers embarked	4,534	4,620	8,394
Deck passengers disembarked	2,117	2,484	3,423
Accra Port.—			
Deck passengers examined	1,032		
Accra Airport.—			
Passengers departing	7,914		
Passengers arriving	8,683		
Passengers in transit	1,199		

One thousand nine hundred and seventy-eight planes were treated with insecticide.

(vi) MATERNITY AND CHILD WELFARE (*Vide para.* 10)

TABLE XIV

Types of Centre	Attendances	
	Children	Expectant Mothers
Government Centres	84,520	33,037
Red Cross Centres	33,565	43,667
Mission Centres	69,295	6,749
Total	187,380	83,453

63. In 1949 the total attendances were 194,561 children and 96,187 mothers.

In addition to the above, there were 99,732 attendances at weighing clinics. The corresponding figure for 1949 was 85,853.

(vii) HOSPITALS, DISPENSARIES AND LABORATORIES

64. During the year a total of 60,766 in-patients were treated; there were 3,150 deaths which represent 5·1 per cent of the total number of in-patients treated. In 1949 the total was 59,042 in-patients and 3,367 deaths.

Seven hundred and forty-seven thousand two hundred and thirty-one cases out-patients were treated. This figure shows a decline of 30,718 cases from the previous year.

X-Ray Services.—There have been no additions to the staff although the work of this service has greatly increased.

One X-ray Assistant was granted a scholarship during the year to the United Kingdom for training as a radiographer.

The following is a record of the work done in the various X-Ray departments.

	Radiographic	Physiotherapy	
		Cases	Attendance
Gold Coast Hospital	5,087	982	7,870
Sekondi Hospital	2,591	83	594
Kumasi Hospital	1,736	399	3,348
Tarkwa Hospital	700	52	359
Cape Coast Hospital	839	189	836
Takoradi Hospital	775	227	1,816
Winneba Hospital	547	207	1,000
Tamale Hospital	182	7	117

Laboratory Service.—During the year the Medical Reseach Institute carried out 38,873 routine examinations under the following categories :—

Serological tests	10,686
Bacteriological tests	2,557
Microscopy of faeces	4,617
Urinalysis, etc.	3,795
Sputum	1,602
Smears, etc.	942
Blood examination for parasites	8,219
Blood counts	1,401
Blood chemistry	456
Blood miscellaneous	1,643
Miscellaneous (Preg. tests, annual inoculations, etc.)	2,945

The following table shows the work carried out in the Hospital Laboratories :—

OUTSTATION LABORATORIES

SUMMARY OF WORK DONE IN 1950

Station (No. of Senior and Junior Staff in brackets)	Total Exami-nation	BLOOD FILMS			FAECES					URINES		SPUTUM		SMEARS		Bacte-rilogical Tests	Serolo-gical Tests	Bioche-mical Tests
		Total	Per cent with Malaria	Per cent with Tryps	Total	Per cent with Hook-worm	Per cent with Ascaris	Per cent with Taenia	Percent with S. Mansoni	Total	Per cent with S. Hæmo-tobium	Total	Per cent with S.A.F.B.	Total	Per cent with G.N.I.D.			
Accra Ridge (J.1) ...	5002	1848	18·0	—	900	0·4	1·2	2·0	—	1623	0·2	35	8·6	189	27·0			
Accra G.C.H. (J.3) ...	13,944	6,502	8·8	0·03	1,864	17·6	16·1	0·2	—	2,988	6·5	12	25·0	57	17·6			
Accra Mental (J.1) ...	3,278	1,464	19·6	0·1	255	23·2	15·6	0·6	0·2	525	14·3	110	12·7	38	36·9			
Accra P.M.L.H. (J.1) ...	2,034	1,605	66·8	—	280	5·0	22·5	0·4	—	62	Nil	—	—	47	15·2			
Axim (J.1)	2,145	716	64·4	—	575	66·4	52·3	0·5	0·3	474	11·6	84	31·0	110	50·0			
Bawku (J.1)	5,744	1,819	55·1	0·4	1,347	27·2	8·0	4·2	1·1	2,431	7·9	143	21·0	52	84·6			
Cape Coast (J.1)	7,593	3,521	62·6	0·1	1,750	6·0	23·4	0·1	0·1	1,638	5·1	304	16·4	225	56·0			
Dunkwa (J.1)	2,863	900	39·2	—	901	5·9	31·6	0·6	—	150	16·7	200	10·0	500	23·6			
Elmina (J.1)	3,895	3	—	—	370	35·7	41·4	—	—	410	4·9	5	40·0	—	—			
Ho (J.1)	3,546	1,334	35·9	—	1,110	41·0	3·1	0·5	0·4	1,154	4·8	165	12.7	—	—			
Hohoe (J.1)	2,262	1,432	23·0	Nil	161	6·2	Nil	0·6	—	183	2·7	20	30·0	131	32·8			
Keta (J.1)	3,782	1,645	23·3	—	1,560	7·6	34·7	—	—	184	15·2	393	6·6	871	62·2			
Kibi (J.1)	1,761	289	28·7	—	458	27·1	54·1	0·4	—	720	18·9	75	24·0	165	39·4			
Koforidua (J.1)	1,506	707	40·0	—	136	27·2	36·0	1·5	—	178	55 1	172	33·7	47	76·6			
Kumasi G.H. (J.4) ...	25,893	8,105	19·6	0·1	7,716	17·7	20·7	1·1	0·3	4,311	28·4	2,151	8·0	505	48.9			
Kumasi C.W.C. (J.1) ...	24,456	17,585	41·8	—	3,882	0.05	32·1	—	0·025	467	6·4	—	—	—	—			
Navrongo (J.1)	2,616	720	40·7	—	819	29·3	3·8	2·0	0·7	740	41·4	47	21·3	51	17·6			
Oda (J.1)	8,710	2,143	21·7	—	2,559	20·6	86·8	—	—	3,034	30.7	415	14·9	559	16·6			
Sekondi (J.2)	16,871	4,713	29·3	—	4,147	12·3	19·7	2·3	0·3	3,327	1·9	575	19·5	569	41·7			
Sunyani (J.1)	3,743	1,701	51·1	—	1,099	40·9	23·5	2·1	—	677	6·8	150	10·7	77	46·8			
Takoradi (S.1., J.2) ...	8,279	2,450	56·8	—	1,043	6·3	3·7	0·2	0·2	1,854	1·1	327	9·8	114	26·3	493	1034	298
Tarkwa (J.1)	1,800	782	37·3	—	482	11·2	41·1	0·4	5·2	228	39·1	170	35·3	50	60·0			
Tamale (J.1)	6,254	2,261	42·1	0·1	1,568	29·6	10·4	9·2	0·9	414	14·0	380	15·3	544	45·2			
Winneba (J.1)	12,375	3,594	31·1	—	3,664	12·2	30·1	0 1	—	3,572	6·9	472	14·0	1,002	53·6			

(viii) TRAINING OF MEDICAL AND HEALTH PERSONNEL

65. The principal schools of training are :—

(*a*) *The School of Pharmacy, Accra.*—Nine Government and two Private students passed the examination held by the Pharmacy and Poisons Board.

(*b*) *Nurses' Training College, Accra.*—(Reference paragraph 19).

(*c*) *School of Hygiene and Sanitation.*—No pupil sanitary inspectors were admitted to the school during the year, but refresher courses were given for Second Division Sanitary Inspectors who wished to prepare for the Sanitary Inspectors Certificate of the Royal Sanitary Institute (W.A.). Fourteen Government and three Municipal Inspectors obtained this certificate.

(*d*) *Midwives Training Schools.*—These schools are attached to the Maternity Hospital, Accra and the General Hospital, Kumasi.

(*e*) *Laboratory Service.*—Thirteen Microscopists and three Veterinary Assistants were trained during the year.

(*f*) *Training School for Health Visitors.*—This school was started in May, 1950 with seven pupils all of whom passed the State Registered Nurse and Certified Midwives Certificates. The course lasts one year and during this period students are given an average of twelve lectures per week and a great deal of practical instruction. Lectures are given on the ethics and technique of health work. The care of children and adolescents (mental and physical welfare) prevention of disease, personal and domestic hygiene and dietetics, ante-natal and post-natal care ; school health visiting ; anatomy and physiology, childhood diseases and social administration.

Practical instruction is given in infant feeding and special diets, district visiting, weighing centres and out-patients clinics. Visits are made to places of interest such as the Juvenile Court, Public Works Department, water and sewage works and the Leper Colony.

III. FINANCE

EXPENDITURE FOR THE PERIOD 1st JANUARY TO 31st DECEMBER, 1950

Branch	Ordinary	Extraordinary	Total
	£ s. d.	£ s. d.	£ s. d.
Medical ' A '	883,299 11 7	24,742 15 9	908,042 7 4
Trypanosomiasis/Yaws Campagin ' B '	31,343 2 2	2,484 13 5	33,827 15 7
Leprosy Survey ' C '	3,359 16 8	—	3,359 16 8
Nurses' Training College and Hostel ' D'	15,701 7 0	865 13 1	16,567 0 1
Establishment of Leper Settlements	3,223 2 6	—	3,223 2 6
Total	936,926 19 11	28,093 2 3	965,020 2 2
Corresponding Total Gold Coast	10,902,214 10 2	3,110,391 4 7	14,012,605 14 9
Percentage of total to total of Gold Coast for the period 1st January to 31st December, 1950	8·6%	·9%	6·9%

RETURN A

Return of Diseases and Deaths (In-patients) and Diseases (Out-patients) for the Year 1950

Diseases	In-Patients							Out-Patients	
	Remaining in hospital on 31st December 1949	Yearly Total				Total cases treated	Remaining in hospital on 31st December 1950	Males	Females
		Admissions		Deaths					
		Males	Females	Males	Females				
1. (*a*) Typhoid fever	19	157	116	26	13	292	18	29	20
(*b*) Paratyphoid fever	—	17	6	—	—	23	3	2	1
(*c*) Type not defined	—	8	5	1	—	13	—	4	1
2. Typhus fever	—	5	5	1	—	10	1	—	—
3. Relapsing fever	—	10	1	—	—	11	1	—	—
4. Undulant fever	—	—	—	—	—	—	—	—	—
5. Smallpox	1	80	65	18	9	146	1	12	6
6. Measles	—	80	36	1	1	113	5	1,000	717
7. Scarlet fever	—	12	—	—	—	12	—	—	5
8. Whooping cough	—	22	28	2	2	50	1	2,064	1,827
9. Diphtheria	—	—	4	—	—	4	—	5	15
10. Influenza—									
(*a*) with respiratory complications	—	15	5	—	—	20	—	261	248
(*b*) without respiratory complications	2	44	29	—	—	75	3	602	373
11. Cholera	—	—	—	—	—	—	—	—	—
12. Dysentry—									
(*a*) Amœbic	17	394	154	36	11	565	17	425	265
(*b*) Bacillary	4	414	153	18	13	571	10	466	207
(*c*) Unclassified	8	125	45	5	4	178	25	2,938	2,332

RETURN A—*contd.*

Return of Diseases and Deaths (In-patients) and Diseases (Out-patients) for the Year 1950 —*contd.*

Diseases	In-Patients							Out-Patients	
	Remaining in hospital on 31st December, 1949	Yearly Total				Total cases treated	Remaining in hospital on 31st December, 1950	Males	Females
		Admissions		Deaths					
		Males	Females	Males	Females				
13. Plague—									
(*a*) Bubonic	—	—	—	—	—	—	—	4	—
(*b*) Pneumonic	—	—	—	—	—	—	—	1	—
(*c*) Septicæmic	—	—	—	—	—	—	—	—	—
14. Acute poliomyelitis	—	7	2	—	—	9	—	49	29
15. Encephalitis lethargica	1	5	2	3	—	8	—	1	—
16. Cerebro-spinal fever	6	344	151	117	49	501	5	246	171
17. Rabies	—	6	1	2	—	7	—	66	32
18. Tetanus...	10	145	83	47	38	238	5	99	73
19. Tuberculosis of the respiratory system	29	614	127	183	30	770	44	937	354
20. Other tuberculous diseases	15	96	43	12	—	154	15	89	48
21. Leprosy	565	167	35	12	8	767	445	5,532	4,645
22. Venereal diseases—									
(*a*) Syphilis	5	128	23	10	—	156	3	1,240	430
(*b*) Gonorrhœa, complications and sequelæ	80	1,659	425	10	1	2,164	33	11,478	3,903
(*c*) Other V.D.	7	317	64	—	—	388	13	2,073	662
23. Yellow fever	—	10	1	2	—	11	—	2	—
24. Malaria—									
(*a*) Benign tertian	6	305	132	10	4	443	—	1,703	1,242
(*b*) Subtertian	29	1,295	583	28	17	1,907	27	8,815	4,466
(*c*) Quartan	—	14	7	—	—	21	—	133	123
(*d*) Unclassified	56	2,023	1,107	51	45	3,186	61	39,820	25,764
25. Blackwater fever	1	16	15	2	5	32	1	53	9
26. Kala-azar	—	1	—	1	—	1	—	—	—
27. Trypanosomiasis	55	234	83	22	5	372	53	942	449
28. Yaws	18	140	78	—	1	236	12	83,681	56,172
29. Other protozoal diseases	2	183	28	—	—	213	4	1,093	550
30. Ankylostomiasis	14	1,155	265	23	5	1,434	4	3,582	2,294
31. Schistosomiasis	10	494	112	24	1	616	3	3,669	1,299
32. Other helminthic diseases	18	729	326	51	5	1,073	31	6,318	5,402
33. Other infectious and/or parasitic diseases	5	515	148	26	7	668	21	2,639	1,437
34. Cancer and other tumours—									
(*a*) Malignant	10	56	62	91	11	128	5	53	309
(*b*) Non-malignant	6	45	118	—	—	169	1	461	258
(*c*) Undetermined	3	55	18	—	—	76	3	79	78
35. Rheumatic conditions—									
(*a*) Rheumatic Fever	—	6	1	—	—	7	—	162	73
(*b*) Other rheumatic conditions ...	2	239	82	1	—	323	10	17,006	9,175
36. Diabetes	6	89	36	8	5	131	5	109	42
37. Scurvy	—	10	9	1	—	19	—	15	15
38. Beriberi...	2	17	12	5	—	31	1	69	48
39. Pellagra	—	17	4	—	—	21	—	105	61
40. Other diseases—									
(*a*) Nutritional	13	311	270	66	31	594	22	2,851	2,335
(*b*) Endocrine glands and general	6	83	68	4	—	157	1	342	717
41. Diseases of the blood and blood-forming organs	20	323	278	56	47	621	11	2,050	2,290
42. Acute and chronic poisoning ...	—	84	53	24	7	137	1	60	46
43. Cerebral hæmorrhage	4	65	27	36	14	96	6	57	16
44. Other diseases of the nervous system	22	275	154	27	18	451	28	2,362	950
45. Trachoma	—	20	14	—	—	34	1	258	142
46. Other diseases of the eye and annexa	26	746	422	—	1	1,194	32	13,479	8,775
47. Diseases of the ear and mastoid sinus	9	190	95	1	—	294	8	7,038	4,170
48. Diseases of the circulatory system—									
(*a*) Heart diseases	12	261	109	72	22	382	13	742	535
(*b*) Other circulatory diseases ...	2	100	49	17	6	151	1	1,565	935
49. Bronchitis	18	684	237	14	7	939	16	19,164	11,256
50. Pneumonia—									
(*a*) Broncho-pneumonia	15	508	211	80	43	734	18	415	304
(*b*) Lobar-pneumonia	24	918	304	48	31	1,246	36	450	186
(*c*) Otherwise defined	26	498	177	42	12	701	26	1,554	1,073
51. Other diseases of the respiratory system	25	574	286	15	8	885	17	7,063	4,440
52. Diarrhœa and enteritis—									
(*a*) Under 2 years of age	3	182	149	22	19	334	4	7,253	5,652
(*b*) Over 2 years of age	1	533	275	12	12	809	10	8,668	5,555
53. Apendicitis	3	117	62	4	—	182	8	86	45
54. Hernia, intestinal obstruction ...	47	1,271	100	106	10	1,418	38	1,128	80
55. Cirrhosis of the liver	5	98	16	44	4	119	9	69	30
56. Other diseases of the liver and biliary passages	12	245	89	39	14	346	8	808	562
57. Other diseases of the digestive system	39	911	466	40	25	1,416	59	25,503	15,142
58. Nephritis (all forms)—									
(*a*) Acute	14	93	57	32	5	164	5	193	163
(*b*) Chronic	7	108	47	16	8	162	10	93	62
59. Other non-venereal diseases of the genito-urinary system	52	957	653	25	7	1,662	63	4,693	4,973
60. Pregnancy, child-birth, and the puerperal state (including normal labour and maternal welfare)	112	—	6,073	—	132	6,185	144	—	61,903
(*a*) Abortion	15	—	986	—	15	1,001	16	—	924
(*b*) Ectopic gestation	1	—	113	—	19	114	2	—	68
(*c*) Toxæmias of pregnancy ...	2	—	114	—	24	116	—	—	48
(*d*) Other conditions of the puerperal state	52	—	705	—	66	757	32	89	1,352

RETURN A—*contd.*

Return of Diseases and Deaths (In-Patients) and Diseases (Out-Patients) for the Year 1950—*contd.*

Diseases	In-Patients							Out-Patients	
	Remaining in hospital on 31st December, 1949	Yearly Total				Total cases treated	Remaining in hospital on 31st December, 1950	Males	Females
		Admissions		Deaths					
		Males	Females	Males	Females				
61. Diseases of the skin, cellular tissue, bones and organs of locomotion	302	5,697	2,896	115	69	8,895	339	70,438	37,977
62. Congenital malformations and diseases of early infancy (including infant welfare)	13	63	129	3	40	205	15	1,093	1,018
(*a*) Congenital debility (children under 1 year)	—	1	4	—	1	5	1	103	113
(*b*) Premature birth (children under 1 year)	1	38	146	19	35	185	7	82	62
(*c*) Injury at birth (children under 1 year)	—	3	17	3	4	20	—	13	15
63. Senility	1	19	10	4	3	30	—	260	177
64. External causes—									
(*a*) Suicide	—	11	3	5	2	14	—	1	1
(*b*) Other forms of violence ...	206	4,471	1,574	157	70	6,251	174	24,500	6,795
65. Ill-defined	37	2,376	981	30	10	3,394	65	26,633	9,396
Total	2,159	35,353	23,254	2,019	1,131	60,766	2,136	431,288 315943	315,943

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RETURN B

Return of Government Hospitals, 1950

Number of Government Hospitals with Medical Officers	27
Number of Government Hospitals without Medical Officers	6
Total Government Hospitals	33

RETURN C

Beds and Cots Return for 1950

Hospitals with Medical Officers	Paying Hospital		General Hospital		Remarks
	Beds	Cots	Beds	Cots	
Ridge Hospital	33	1	—	—	
Gold Coast Hospital	—	—	288	26	
Maternity Hospital	—	—	73	63	
P. M. L. Hospital	—	—	—	16	
Akuse Hospital	—	—	21	6	
Keta Hospital	—	—	50	11	
Kibi Hospital	—	—	22	—	
Koforidua Hospital	—	—	47	7	
Ho Hospital	—	—	32	4	
Cape Coast Hospital	—	—	73	27	
Dunkwa Hospital	—	—	73	1	
Oda Hospital	—	—	38	8	
Winneba Hospital	—	—	53	6	
Axim Hospital	—	—	23	5	
Effia Nkwanta Hospital	—	—	138	4	13 Treasure cots.
Tarkwa Hospital	—	—	47	12	
Bekwai Hospital	—	—	8	1	
North Wing General Hospital, Kumasi	17	2	—	—	
South Wing General Hospital, Kumasi	—	—	223	32	
Kumasi Child Welfare Clinic	—	—	—	24	12 Treasure cots.
Sunyani Hospital	—	—	20	2	
Takoradi Hospital	38	2	—	—	
Bawku Hospital	—	—	25	2	
Navrongo Hospital	—	—	19	2	
West Tamale Hospital	8	—	—	—	
Central Tamale Hospital	—	—	76	10	
Wa Hospital	—	—	24	4	
Yendi Hospital	—	—	36	—	
Hohoe Hospital	—	—	12	—	
Hospitals without Medical Officers					
Nsawam Hospital	—	—	22	4	
Saltpond Hospital	—	—	2	—	
Lawra Hospital	—	—	21	2	
Salaga Hospital	—	—	12	—	
Mpraeso Hospital	—	—	—	—	
Wiawso Hospital	—	—	8	—	
Totals	96	5	1,486	279	

Total Beds	1,582
Total Cots	284

R. L. CHEVERTON
Director of Medical Services

APPENDIX A

THE INCIDENCE OF URINARY BILHARZIA IN SCHOOL CHILDREN IN VILLAGES OF SOUTHERN TOGOLAND

A large number of children attending a weekly Clinic at Kpedze, a village in Southern Togoland, complained of passing blood in the urine and were found to be suffering from S.hæmatobium infection. I therefore decided to investigate the incidence of Urinary Bilharzia in the school children in this district. This investigation was carried out in July, 1950.

METHOD

The macroscopic method of examining hatched miracidia in centrifuge tubes in a specially constructed rack as described by C. V. Meeser, W. Fraser Ross and D. M. Blair (1948) was used.

The children were made to run round the school after which each child was told to pass the terminal portion of urine into a numbered cigarette tin. The urines were then poured into correspondingly numbered centrifuge tubes which were spun gently at the lower speed of a hand centrifuge for 1½ minutes. The urine was drained off from each tube and a drop of the remaining deposit examined microscopically for ova. The remainder of the deposit in each tube was shaken up with approximately five of rain water. The tubes thus prepared were left in the racks for 30 minutes before examination with a hand lens for miracidia.

RESULTS

Table 1 shows the results obtained by microscopic and macroscopic examination of the urines of 500 school children. In microscopic examination a slide containing a large number of red blood cells was regarded as positive although no ova were seen.

TABLE I

EXAMINATION OF URINES OF 500 KPEDZE SCHOOL CHILDREN FOR EVIDENCE OF S. HÆMATOBIUM INFECTION

	Number	*Per cent*	*Total Per cent*
Positive by Macroscopic and Microscopic Examination ...	167	33·4	52·2 Positive
Positive by Macroscopic examination only	55	11·0	
Positive by Microscopic examination only	39	7·8	
Negative by both methods of examination	239	47·8	47·8 Negative
	500		

From the results it will be seen that more cases were diagnosed by miracidial hatching than by the microscope. This is contrary to the results quoted in the above-mentioned report by C. V. Meeser and others. In all the ova examined under the microscope vigorous ciliary action was seen and in some cases hatching had taken place in the undiluted urine on the slide. No obviously dead ova were seen in the whole series. None of the children had received any previous treatment with Antimony preparations.

The above results show that the macroscopic method of diagnosis forms a quick and reasonably accurate means of investigation in organised groups such as schools.

With less well organised groups preliminary investigation with intradermal injections of cercarial antigen would probably be more convenient.

Using two hand centrifuges and four examination racks each containing ten tubes it was found that urines could be examined at the rate of 60-80 in an hour. The following team was employed :—

One assistant to issue and collect the urine tins and afterwards to wash tubes and tins ready for the next batch.

One assistant to pour urine into the centrifuge tubes and then to add water to the centrifuged deposit.

Two assistants to centrifuge the tubes.

One assistant to examine the tubes for miracidia.

I did all the microscopic examination and frequently checked the examination for miracidia.

INTESTINAL WORMS

The stools of the first 300 of this group of 500 children were examined for evidence of other helminthic infection. One smear only of each stool emulsified in normal saline was examined : no concentration methods were used. The results are shown in Table II.

TABLE II

EXAMINATION OF STOOLS OF 300 KPEDZE SCHOOL CHILDREN

Hookworm ova alone found in	56
Ascaris ova alone found in	49
Hookworm and Ascaris ova found in	19
No ova found in	176
Total examined	300

No ova of S.mansoni were seen although the disease is known to occur in the area. In 17 of the smears larvae of Strongyloides Sp. were found.

Table III shows the incidence of S.haematobium infection together with other helminthic infection in the same group of 300.

TABLE III

INCIDENCE OF COMBINED HELMINTHIC INFECTION IN 300 KPEDZE SCHOOL CHILDREN

S.hæmatobium + Hookworm found in	30
S.hæmatobium + Ascaris found in	32
S.hæmatobium + Ascaris + Hookworm	15
S.hæmatobium alone found in	69
Hookworm and/or Ascaris without S.hæmatobium found in	47
No ova of any kind found in	107
Total examined ...	300

URINARY BILHARZIA AND HAEMOGLOBIN PERCENTAGE

As a rapid means of determining hæmoglobin values the Tallqvist method was used. This is a very inaccurate method of estimating hæmoglobin and no reliance can be placed on the absolute hæmoglobin value obtained. I submit, however, that as all the readings were made by one observer (myself) using the same scale they form some guide as to the relative distribution of hæmoglobin levels in the series. Table IV shows the results obtained :—

TABLE IV

ESTIMATION OF HB PER CENT BY THE TALLQVIST METHOD IN 500 KPEDZE SCHOOL CHILDREN

Hb per cent	Number of Children Bilharzia + (*by macroscopic and/or microscopic method*)	Bilharzia–
50	14	4
55	7	4
60	34	27
65	24	22
70	98	74
75	19	10
80	26	18
85	5	1
90	23	49
95	1	4
100	9	27
	260	240
Mean Hb per cent	73·8 per cent	79·2 per cent

It will be seen that while the mean Hb % is not significantly different in the two series there is some considerable difference in the distribution of Hb percentages in the two groups. Out of the 240 in which no evidence of Bilharzia was found 109 were found to have a percentage of 75 per cent and over whereas in the 260 with Bilharzia only 83 were in this group. Even with regard to the inaccuracies in the method the results suggest that Bilharzia infection may have some effect on the hæmoglobin level. I would like to be able to repeat the investigation using some more accurate method of Hb. estimation. The standard of nutrition of this group of children was high and although in a number of cases a heavy hookworm infection, as judged from the number of eggs seen in a smear, was discovered no case of severe anaemia combined with hookworm infection was seen. Table V shows the distribution of Hb. percentages in relation to Bilharzia and hookworm infection in a group of 300.

TABLE V

ESTIMATION OF HB PER CENT BY THE TALLQVIST METHOD IN 300 KPEDZE SCHOOL CHILDREN

Hb per cent	Bilharzia alone	Hookworm alone	Bilharzia and Hookworm	Neither
50	4	2	2	–
55	3	–	–	2
60	10	2	12	19
65	10	2	3	7
70	23	4	14	20
75	8	2	2	3
80	14	3	4	8
85	5	–	–	1
90	18	8	5	39
95	–	–	1	5
100	6	7	2	20
Total Examined	101	30	45	124
Mean Hb. per cent	77·6	83·8	73·8	74·6

FURTHER INVESTIGATIONS

A survey of other widely scattered schools in the district was made using the Miracidioscope alone for detecting Bilharzial infection. To get some idea of the prevalence of intestinal helminthiasis, in as many schools as possible the stool of each fifth pupil was examined by direct smear for the presence of ova. Each school draws its pupils from villages in the immediate neighbourhood as they have to walk to school each morning. In the school holidays, however, a number of the pupils visit relatives in other villages.

Table VI shows the results obtained in this investigation. From this table it would appear that in this district Urinary Bilharzia is not a widespread disease but occurs in isolated localities. As the surface water in these areas is not plentiful it may be possible at no great expense to control or even eliminate the disease by a combination of effective mass treatment and the use of molluscicides.

TABLE VI

INVESTIGATION OF HELMINTHIC INFECTION IN SCHOOL CHILDREN IN SOUTHERN TOGOLAND

(*SEE* SCHEDULE ATTACHED)

SUMMARY

1. Macroscopic and Microscopic methods of diagnosis of Urinary Bilharzia are compared and the macroscopic method found to be quick and reasonably accurate under field conditions.

2. While Urinary Bilharzia in this district cannot be regarded as a serious disease in itself (most patients complain of nothing other than the painless passing of blood-stained urine) it may be an important factor in lowering the general standard of health and the body resistance to other more important infections.

3. Investigation of hæmoglobin levels by Tallqvist's method suggests that Bilharzia frequently lowers the percentage of hæmoglobin in the blood but does not commonly produce gross clinical anaemia provided that nutrition is adequate. The Tallqvist method is inaccurate and therefore the results cannot be regarded as wholly conclusive.

4. The survey shows that in this district Urinary Bilharzia is a localised infection at present confined to a few scattered villages and streams.

REFERENCE

C. V. Meeser, W. Fraser Ross and D. M. Blair (1948) J. Trop. Med. & Hygiene Ld., 54.

G. A. OWEN
Medical Officer.

SCHEDULE I

TABLE VI

INVESTIGATION OF HELMINTHIC INFECTION IN SCHOOL CHILDREN IN SOUTHERN TOGOLAND

School	Urine Examined	Miracidia Found	%Bilharzia Positive	Stools Examined	Hookworm Positive	%Hookworm Positive	Ascaris Positive	%Ascaris Positive
Kpedze	504	223	44·2	300	75	25	68	22·7
Ho	868	37	4·3	—	—	—	—	—
Dzolo	228	2	0·9	—	—	—	—	—
Vane	256	8	3·1	40	7	17·5	11	27·5
Dzolobegeme ...	65	Nil	Nil	—	—	—	—	—
Biakpe	117	3	2·6	30	13	43·3	2	6·7
Fume	37	1	2·7	7	5	71·4	Nil	Nil
Dzorkpe	88	Nil	Nil	19	8	42·1	3	15·8
Shia	270	18	6·7	42	9	21·4	2	4·8
Tokokoe	58	Nil	Nil	11	Nil	—	Nil	—
Tanyigbe	183	9	4·9	36	7	19·4	Nil	—
Akoefe	93	Nil	Nil	16	3	18·7	Nil	—
Akome	56	2	3·6	10	3	30	2	20
	2,823	303	10·7	511	130	25·4	88	17·2

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